



# Temporary Structures – Temporary Supports

## Revision and Approval

Revision	Date	Nature of Changes	Approved By
0	06-04-2021	Original Issue	Michael Francis

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## Background

This process establishes Structure Construction (SC) responsibilities and procedures for review and authorization of submittals, quality assurance, and installation and removal of temporary supports.

Temporary supports are the supports required during retrofit, reconstruction and removal activities, and include jacking assemblies and accessories.

Prior to reviewing this Bridge Construction Memo (BCM), it is essential to review [Contract Specifications](#), Section 48-3, *Temporary Structures – Temporary Supports*, that this BCM is based on as identified in the title block above. The information in the contract specifications typically will not be repeated in the text of this BCM.

## Process Inputs

1. Contract plans with temporary support details, design loading, and location(s)
2. Contractor's temporary support submittal
3. Jack Calibration Charts

## Procedure

1. All work associated with this process is charged as [Project Direct – Construction](#).

2. Inspection of field work for this process is:
  - a. [Continuous](#) for placement and removal of temporary supports.
  - b. [Intermittent](#) for maintenance of in-place temporary supports.
3. Before Construction begins:
  - a. Review temporary supports submittal for conformance with contract documents and railroad requirements and authorize in accordance with [BCM C-11](#), *Shop Drawing Review of Temporary Structures* and the [Falsework Manual](#), Chapter 2, *Review of Shop Drawings*.
  - b. When railroad is involved:
    - i. Review schedule of work and inform the railroad of the contractor's proposed schedule.
    - ii. Obtain railroad approval prior to authorizing shop drawings.
  - c. Discuss the following items with the contractor and Resident Engineer (RE) at preconstruction conference:
    - i. Work windows, contingency plan, and traffic control.
    - ii. Requirements for the temporary structure engineer who signed the authorized shop drawings to be present during jacking activities and certifying the system prior to loading.
    - iii. Contingency plan, and authorization of submittals in accordance with *Contract Specifications, 5-1.23, Control of Work – Submittals*.
    - iv. Temporary support erection and removal sequence, and verification that the temporary support erection and removal sequence discussed matches that shown on the authorized shop drawings.
    - v. Coordination of temporary supports with temporary pedestrian facility, where applicable.
  - d. Review as-built plans and compare to actual field conditions.
  - e. Verify all required materials that are on-site are per the authorized shop drawing.
  - f. Verify the jack has a current calibration chart.
  - g. Verify the contractor performed an initial survey of the structure.
  - h. Determine welds that require inspection, including visual inspection in accordance with the *American Welding Society, Structural Welding Code – Steel* (AWS D1.1) or *American Welding Society, Structural Welding Code – Steel Reinforcing Bars* (AWS D1.4) for welding rebar.

4. During Construction:
- a. Verify the presence of the Contractor's engineer before jacking activities commence.
  - b. Verify temporary supports are installed in accordance with the requirements of the contract documents and authorized shop drawings.
  - c. Verify that the contractor is monitoring and recording the vertical and horizontal displacements of the temporary supports and the existing structure during the jacking operations.
  - d. Confirm the Temporary Structure Inspection Report addresses all requirements of *Contract Specifications*, Section 48-1.01C(2), *Temporary Structure Inspection Report*.
  - e. Maintenance of in-place temporary supports is required as follows:
    - i. Verify temporary support elements are in place and functioning as intended.
    - ii. Verify temporary pedestrian facilities are maintained per [BCM 16-2.02](#), *Temporary Facilities – Temporary Pedestrian Facilities*.
  - f. Document temporary pedestrian facilities comply with Americans with Disabilities Act regulations per BCM 16-2.02, *Temporary Facilities – Temporary Pedestrian Facilities*.
  - g. Document all inspection, construction, and quality assurance activities, pertinent to this BCM, in the Daily Reports per [BCM C-7](#), *Daily and Weekly Reports*.
  - h. Measure and document any change in bridge clearance or weight rating in accordance with Attachment 2, *Guidance for Completing Required Documents Submitted to SC HQ*, of [BCM C-6](#), *Required Documents to be Submitted During Construction*.
    - i. Note that information on this topic is found within Section 6, *Permanent Vertical Clearance*, of the aforementioned Attachment
  - i. Verify welding and welder certification are in accordance with AWS D1.1 or AWS D1.4 as applicable.
  - j. Following these procedural steps will mitigate the following risks associated with construction of temporary supports:
    - i. Potential for delay in schedule due to review time
    - ii. Potential for collapse or failure
    - iii. Unplanned movement of structure during operations
    - iv. Miscommunication with railroad or other Right of Way entities

- v. Potential for equipment failure.
  - vi. Extended traffic closure windows
5. After Construction:
- a. File all project documentation (correspondence, material acceptance documentation, authorized shop drawings, daily reports, etc.) in the appropriate category in the project records as specified in the *Construction Manual*, [Section 5-1.02](#), *Contract Administration – Project Records and Reports – Organization of Project Documents*.

## **Process Outputs**

1. Authorized Shop Drawings
2. Temporary Structure Analysis Report when falsework requires an engineer's stamp. Refer to *Contract Specifications*, Section 48-3.01C(2), *Shop Drawings*
3. Transmittal Letter
4. Temporary Structure Inspection Report
5. Daily Reports
6. [Form TR-0019](#), *Notice of Change in Clearance or Bridge Weight Rating*

## **Attachments**

None